

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND – REGION 1
ONE CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023**

FACT SHEET

**DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES.**

NPDES PERMIT NO.: MA0100935

PUBLIC NOTICE START AND END DATES:

NAME AND ADDRESS OF APPLICANT:

**Town of Lenox
Department of Public Works
275 Main Street
Lenox, Massachusetts 01240**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**Lenox Wastewater Treatment Plant
239 Crystal Street
Lenox Dale, Massachusetts 01242**

RECEIVING WATER: Housatonic River

CLASSIFICATION: B (Warm Water Fishery)

Table of Contents

I.	PROPOSED ACTION, TYPE OF FACILITY, AND DISCHARGE LOCATION	3
II.	RECENT PERMITTING HISTORY	3
III.	DESCRIPTION OF THE DISCHARGE	3
IV.	LIMITATIONS AND CONDITIONS	3
V.	PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION	3
A.	Process Description	3
B.	Statutory and Regulatory Authority	4
1.	General Requirements	4
2.	Technology-based Requirements	4
3.	Water Quality Standards; Designated Use; Outfall 001	5
a.	Available Dilution	6
4.	Explanation of Effluent Limitations (Outfall 001)	7
a.	Flow	8
b.	Conventional Pollutants	8
c.	Non-Conventional Pollutants	10
d.	Toxics Control: Outfall 001	17
VI.	SLUDGE CONDITIONS	18
VII.	INDUSTRIAL USERS	19
VIII.	ESSENTIAL FISH HABITAT DETERMINATION (EFH)	19
IX.	ENDANGERED SPECIES ACT (ESA)	19
X.	MONITORING AND REPORTING	20
XI.	STATE PERMIT CONDITIONS	20
XII.	GENERAL CONDITIONS	20
XIII.	STATE CERTIFICATION REQUIREMENTS	20
XIV.	PUBLIC COMMENT PERIOD AND PROCEDURES FOR FINAL DECISION	20
XV.	EPA AND MASSDEP CONTACTS	21

Figures and Attachments

Figure 1:	Site Map of the Lenox WWTP	22
Figure 2	Process Flow Diagram of the Lenox WWTP	23
Attachment A: Outfall 001 Effluent Monitoring Data (2005-2007)		
Attachment B: Outfall 001 WET Metals Data (2004-2006)		

I. PROPOSED ACTION, TYPE OF FACILITY, AND DISCHARGE LOCATION

The above named applicant has applied to the U.S. Environmental Protection Agency (EPA) for re-issuance of its National Pollutant Discharge Elimination System (NPDES) permit to discharge into the designated receiving water. The existing permit expired on January 31st, 2005 and was administratively continued pursuant to 40 CFR § 122.6. Upon becoming effective, this permit and the authorization to discharge will expire five (5) years from the effective date.

The facility is engaged in the collection and treatment of municipal wastewater. The discharge is from a secondary wastewater treatment plant and the treated effluent is discharged to the Housatonic River.

The facility's discharge outfall is listed below:

<u>Outfall:</u>	<u>Description of Discharge:</u>	<u>Outfall Location:</u>
001	Treated Effluent	42°20'56" lat./73°14'43" long

II. RECENT PERMITTING HISTORY

- Current permit administratively continued
- Reapplication for a NPDES permit received by EPA in January 2005
- Current permit expired on January 31st, 2005
- Current permit issued on November 28, 2001
- Original permit issued on August 18th, 1977

III. DESCRIPTION OF THE DISCHARGE

A quantitative description of the wastewater treatment plant discharge in terms of significant effluent parameters based on recent monitoring data is shown in **Attachment A** of this fact sheet.

IV. LIMITATIONS AND CONDITIONS

The effluent limitations of the draft permit and monitoring requirements may be found in the draft NPDES permit.

V. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION DERIVATION

A. PROCESS DESCRIPTION

The Lenox Wastewater Treatment Plant (WWTP) is a municipal secondary wastewater treatment facility which was upgraded in 2001 to include an additional secondary clarifier.

Since 1998, this facility has received the flow from the former Lenox Dale WWTP, which was converted into a pump station and taken off-line. The Lenox WWTP has a design flow rate of 1.8 million gallons per day (MGD) and serves a population of 5,400 residents. The annual average flow is expected to remain below the 1.19 MGD flow limitation in the current permit for the next several years. Therefore, the proposed effluent limitations on page 2 of the draft permit were calculated using the current permit's flow limitation of 1.19 MGD and not the facility's design flow of 1.8 MGD. Increases in the discharge can only be authorized consistent with water quality standards, including the Massachusetts Antidegradation Policy found at 314 CMR § 4.04. Since the flow limitation in the current permit has been maintained in the draft, a formal antidegradation review process is not required for this permit action.

Wastewater treatment processes at the facility consist of an aerated grit chamber followed by gravity flow into two aeration basins. The aeration basin effluent flows by gravity to a distribution structure that provides alum chemical addition for phosphorus removal, and then divides the flow into three secondary clarifiers. The secondary effluent is disinfected in a chlorine contact chamber, and the chlorinated effluent is discharged to the Housatonic River through a single outfall (outfall 001; See also **Figure 1**). Return sludge from the secondary clarifiers is pumped to the aeration basins, and waste sludge is pumped from the clarifiers to a gravity belt thickener. The sludge cake is stored in a container for offsite disposal. Sludge from this facility is transported offsite by Synagro of Waterbury, CT for incineration. The Lenox WWTP does not currently serve any industrial users, and this facility does not anticipate serving any industrial users during the life of the newly issued permit. The facility's location and flow schematic are shown in **Figures 1 and 2** of this fact sheet.

B. STATUTORY AND REGULATORY AUTHORITY

1. General Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting requirements. This draft NPDES permit was developed in accordance with the various statutory and regulatory requirements established pursuant to the CWA and any applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, and 125.

When developing permit limits, EPA is required to consider (a) technology-based requirements, (b) water quality-based requirements, and (c) all limitations and requirements in the current/existing permit. These requirements are described in the following paragraphs.

2. Technology-based Requirements

Under Section 301(b)(1) of the Clean Water Act (CWA), publicly owned treatment works (POTWs) must have achieved effluent limitations based upon secondary treatment by July 1,

1977. The secondary treatment technology guidelines (effluent limits) for POTWs, which represent the minimum level of control that must be applied to POTWs, can be found at 40 CFR Part 133. Since all Clean Water Act statutory deadlines for meeting technology-based guidelines have expired, the deadline for compliance with technology-based effluent limits for a Publicly Owned Treatment Works is the date of permit issuance (See also: 40 CFR § 125.3(a)(1)). Extended compliance deadlines cannot be authorized by a NPDES permit if statutory deadlines have passed.

3. Water Quality Standards; Designated Use; Outfall 001

Section 301(b)(1)(C) of the Clean Water Act requires water quality-based limits in NPDES permits when EPA and the State determine that effluent limits more stringent than technology-based limits are necessary to maintain or achieve state or federal water quality. Receiving water requirements are established according to numerical and narrative standards adopted under state law. A water quality standard consists of three elements: (1) beneficial designated use(s) for a water body or segment of a water body; (2) a numeric or narrative water quality criteria sufficient to protect the designated use(s); and (3) an anti-degradation requirement to ensure that once a use is attained, it will be maintained.

Pursuant to 40 CFR § 122.44(d), permittees must achieve water quality standards established under Section 303 of the CWA, including state narrative criteria for water quality. Additionally, under 40 CFR § 122.44(d)(i), “Limitations must control all pollutants or pollutant parameters (either conventional, non-conventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality”. When determining whether a discharge causes, or has the reasonable potential to cause or contribute to an excursion above a narrative or numeric criterion, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, and where appropriate, consider the dilution of the effluent in the receiving water.

A permit may not be renewed, reissued, or modified with less stringent limitations or conditions than those contained in the previous permit unless in compliance with the anti-backsliding requirements of the CWA. EPA’s anti-backsliding provisions restrict the relaxation of permit limits, standards, and conditions. Therefore, except under certain limited circumstances, effluent limits in the reissued permit must be at least as stringent as those of the previous permit. Effluent limits based on technology, water quality, and state certification requirements must meet anti-backsliding provisions found under Section 402 (o) and 303 (d) of the CWA, and in 40 CFR 122.44 (1).

In accordance with regulations found at 40 CFR Section 131.12, MassDEP has developed and adopted a state-wide antidegradation policy to maintain and protect existing water quality. The Massachusetts Antidegradation Policy is found at Title 314 CMR 4.04. No lowering of water quality is allowed, except in accordance with the antidegradation policy.

The Housatonic River originates from tributaries in the Towns of Peru, Windsor, and Hinsdale, Massachusetts and flows in a southerly direction through the City of Pittsfield and the Towns of Lenox and Lee, then through southern Massachusetts into Connecticut. The Massachusetts Surface Water Quality Standards, 314 Code of Massachusetts Regulations (CMR) 4.05(4)(a), classifies the segment of the Housatonic River into which the Lenox WWTP discharges (segment MA21-19) as a Class B-Warm Water Fishery. The Massachusetts Surface Water Quality Standards describes Class B waters as having the following uses: (1) a habitat for fish, other aquatic life and wildlife; (2) primary and secondary contact recreation; (3) a source of public water supply (i.e., where designated and with appropriate treatment); (4) suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses; and (5) shall have consistently good aesthetic value.

A warm water fishery is defined in the Massachusetts Surface Water Quality Standards (314 CMR 4.02) as waters in which the maximum mean monthly temperature generally exceeds 20°C during the summer months and are not capable of supporting a year-round population of cold-water stenothermal aquatic life.

Sections 305(b) and 303(d) of the CWA requires that states complete a water quality inventory and develop a list of impaired waters. Specifically, section 303(d) of the CWA requires states to identify those waterbodies that are not expected to meet water quality standards after implementation of technology-based controls and, as such, require the development of a total maximum daily load (TMDL). In Massachusetts, these two evaluations have been combined into an Integrated List of Waters. The integrated list format provides the status of all assessed waters in a single multi-part list. The Massachusetts Year 2004 Integrated List of Waters (Section 303(d) list) lists the segment of the Housatonic River into which the Lenox WWTP discharges (MA21-19) as a Category 5 water (waters requiring a TMDL). The pollutants causing the impairment are listed as: Unknown toxicity, priority organics, thermal modifications, pathogens, and turbidity. The proposed effluent limitations in the draft permit are sufficiently stringent to ensure that the discharge from the Lenox WWTP does not cause or contribute to the impairment of the river.

a. Available Dilution

Water quality-based effluent limitations are established with the use of a calculated available dilution of the effluent. Massachusetts water quality regulations require that the available effluent dilution be calculated based upon the 7Q10 low flow of the receiving water (314 CMR § 4.03(3)(a)). The 7Q10 flow is the mean low flow over seven consecutive days, recurring every ten years.

The 7Q10 flow data used to calculate the proposed effluent limitations in the draft permit is based on measurements of flow in the Housatonic River above the Lenox WWTP, which was collected by the United States Geological Survey (USGS) gaging station 01197000 on the East Branch of the Housatonic River at Coltsville, MA, and also estimates of the drainage basin area above the outfall. The 7Q10 used to calculate the proposed effluent limitations has been updated based on data from the USGS low-flow frequency statistics for gaging stations. The

current data shows only a slight change in the 7Q10 flow in the area where the Lenox WWTP discharge outfall is located, since the instream flow in this area has been regulated by power plants and by the Cleveland Brook Reservoir since 1949. Therefore, the 7Q10 at the USGS gaging station 01197000 on the East Branch of the Housatonic River at Coltsville, MA is 12.5 cubic feet per second (cfs) with a drainage area of 57 square miles (mi²).

The 7Q10 at the USGS gaging station 0119700 was divided by the drainage area in the river at the location of the station to derive a flow factor (see **Table 1**). This flow factor was then multiplied by the drainage area in the segment of the Housatonic River where the Lenox WWTP discharge outfall is located (170 mi²) to calculate the 7Q10 at the point of discharge as follows:

Table 1: Calculation of 7Q10 at the Lenox WWTP

	USGS Gage 0119700	Lenox WWTP
Drainage Area (mi²)	57	170
7Q10 (cfs)	12.5	37
Flow Factor (cfs/mi²)	0.2193	0.2193
7Q10 at Lenox WWTP = 0.2193 cfs/mi² * 170 mi² = 37 cfs		

The available dilution (dilution factor) at the point of discharge was calculated using the design flow of the facility (1.19 MGD) and the estimated 7Q10 at the point of discharge (37 cfs) as follows:

$$\text{Dilution} = (\text{design flow (cfs)} + 7\text{Q10 (cfs)}) / \text{design flow of facility}$$

$$\text{Design Flow in cfs} = 1.19 \text{ MGD} * 1.55 \text{ cfs/MGD} = 1.84 \text{ cfs}$$

$$\text{Dilution} = (1.84 \text{ cfs} + 37 \text{ cfs}) / 1.84 \text{ cfs} = 21.1 \text{ (rounded to) } 21$$

4. Explanation of Effluent Limitations (Outfall 001)

In addition to the State and Federal regulations described above, data submitted by the permittee in their re-application as well as data submitted on monthly discharge monitoring reports (DMRs) and in whole effluent toxicity (WET) test reports from 2004-2007 was used in the process of evaluating the discharge and in the derivation of effluent limitations (see **Attachments A and B**).

a. Flow

The flow limitation in the current permit of 1.19 MGD has been maintained in the draft. Flow is to be measured continuously. The permittee shall report the annual average monthly flow using the annual rolling average method. Additionally, the permittee shall report the average monthly and maximum daily flow.

b. Conventional Pollutants

1. Biochemical Oxygen Demand (BOD₅)

The draft permit includes proposed average monthly and average weekly concentration and mass limitations for biochemical oxygen demand (BOD₅). The requirements set forth at 40 CFR §133.102(a)(1) and (2) state that the 30-day average concentration of BOD₅ shall not exceed 30 mg/l and that the seven (7)-day average concentration of BOD₅ shall not exceed 45 mg/l. These limits are included in the draft permit.

40 CFR §122.45(f) requires mass limitations for BOD₅ in NPDES permits. The mass limitations in the draft permit were calculated as follows:

$$\text{Mass Limitation (lbs/day)} = C \times DF \times 8.34$$

Where:

C = Concentration limit

DF = Design flow of the facility, in MGD

8.34 = Factor to convert effluent concentration in mg/l and design flow in MGD to lbs/day.

$$\text{Average Monthly Mass Limit} = 1.19 \text{ MGD} \times 30 \text{ mg/l} \times 8.34 = 300 \text{ lbs/day}$$

$$\text{Average Weekly Mass Limit} = 1.19 \text{ MGD} \times 45 \text{ mg/l} \times 8.34 = 450 \text{ lbs/day.}$$

The concentration and mass limits for BOD₅ in the draft permit are the same as those in the current permit, and are consistent with the anti-backsliding requirements of 40 CFR § 122.44 (l).

In addition, in accordance with the provisions set forth at 40 CFR § 133.102(3), the draft permit requires that the 30-day average percent removal for BOD₅ be no less than 85%.

2. Total Suspended Solids (non-filterable) (TSS)

The draft permit includes proposed average monthly and average weekly concentration and mass limitations for total suspended solids (TSS). The requirements set forth at 40 CFR §133.102(b)(1) and (2) state that the 30-day average concentration of TSS shall not exceed 30

mg/l and the 7-day average concentration of TSS shall not exceed 45 mg/l. These limits are included in the draft permit.

40 CFR §122.45(f) requires mass limitations for TSS in NPDES permits. The mass limitations in the draft permit were calculated as follows:

$$\text{Mass Limitation (lbs/day)} = C \times DF \times 8.34$$

Where:

C = concentration limit

DF = Design flow of the facility, in MGD

8.34 = Factor to convert effluent concentration in mg/l and design flow in MGD to lbs/day.

$$\text{Average Monthly Mass Limit} = 1.19 \text{ MGD} \times 30 \text{ mg/l} \times 8.34 = 300 \text{ lbs/day}$$

$$\text{Average Weekly Mass Limit} = 1.19 \text{ MGD} \times 45 \text{ mg/l} \times 8.34 = 450 \text{ lbs/day}$$

The concentration and mass limits for TSS in the draft permit are the same as those in the current permit, and are consistent with the anti-backsliding requirements of 40 CFR § 122.44 (l).

In addition, in accordance with the provisions set forth at 40 CFR § 133.102(3), the draft permit requires that the 30-day average percent removal for TSS be no less than 85%.

3. pH

Historically, MassDEP has required compliance with pH limitations at the end-of-pipe with no allowance for dilution. Therefore, the pH limits proposed in the draft permit are based on State certification requirements for Publicly Owned Treatment Works under Section 401(d) of the CWA, 40 CFR §124.53 and 124.55. Specifically, the Massachusetts Water Quality Standards for Class B Waters (314 CMR § 4.05 (3)(b)(3)) require the pH to be within the range of 6.5-8.3 Standard Units (SU) and not more than 0.5 Standard Units outside of the natural background range. There shall be no change from the natural background conditions that would impair any use assigned to this Class.

The pH limitations proposed in the draft permit are at least as stringent as the pH limitations set forth at 40 CFR § 133.102(c.).

The pH limitations in the draft permit are the same as those in the current permit, in keeping with the anti-backsliding requirement of 40 CFR § 122.44(l)

A change in the pH limits in the draft permit would be considered if the applicant demonstrates to the satisfaction of EPA and the MassDEP that the in-stream pH water quality standard will be protected when the discharge is outside the permitted range. The applicant may request in

writing that the permit limits be modified by the Agencies to incorporate the results of the demonstration.

4. Eschericia coli (E. coli)

The draft permit includes proposed seasonal (April 1st – October 31st) *E. coli* limitations which are based upon the newly adopted *E. coli* criteria in the revisions to the Massachusetts Surface Water Quality Standards (314 CMR § 4.05(3)(b)). These limitations are a State certification requirement. The monthly average limitation proposed in the draft permit is 126 colony forming units (cfu) per 100 ml, and shall be expressed as a monthly geometric mean. The daily maximum limitation proposed in the draft permit is 410 cfu/100 ml. The *E. coli* monitoring frequency proposed in the draft permit is once per week. The draft permit also contains a requirement for the concurrent collection of the weekly *E. coli* samples with the weekly fecal coliform bacteria samples. In addition, bacterial samples (*E. coli* and fecal coliform bacteria) shall also be collected concurrently with one of the daily total residual chlorine (TRC) samples.

5. Fecal Coliform Bacteria

The fecal coliform limitations and monitoring requirements in the current permit are maintained in the draft since EPA has not approved the *E. coli* water quality standard recently adopted by the State. The proposed monitoring frequency for fecal coliform bacteria is once per week.

Weekly fecal coliform bacteria samples shall be collected concurrently with the weekly *E. coli* samples. In addition, bacterial samples (*E. coli* and fecal coliform bacteria) shall also be collected concurrently with one of the daily total residual chlorine (TRC) samples.

c. Non-Conventional Pollutants

1. Total Residual Chlorine (TRC)

Chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. The total residual chlorine (TRC) limitations in the current permit are maintained in the draft. The TRC limitations are seasonal (April 1st – October 31st) and are based upon the State Water Quality Standards found at 314 CMR § 4.05(5)(e), and the State's Implementation Policy for the Control of Toxic Pollutants in Surface Waters, February 23, 1990.

The water quality criteria established for chlorine in the 2002 EPA National Recommended Water Quality Criteria for freshwater are 19 µg/l daily maximum (acute) and 11 µg/l monthly average (chronic). TRC limitations for the Lenox WWTP are based on the available dilution (21) at the outfall location and the national recommended water quality criteria for TRC. The TRC limitations in the draft permit were calculated to be 0.4 mg/l daily maximum and 0.23 mg/l monthly average using the following equations:

$$\text{Daily Maximum TRC Limit} = \text{Acute Criteria} \times \text{Dilution Factor}$$

$$= 19 \mu\text{g/l} \times 21 = 399 \mu\text{g/l} = 0.40 \text{ mg/l}$$

$$\begin{aligned}\text{Monthly Average TRC Limit:} &= \text{Chronic Criteria} \times \text{Dilution Factor} \\ &= 11 \mu\text{g/l} \times 21 = 231 \mu\text{g/l} = 0.23 \text{ mg/l}\end{aligned}$$

The once-per-day monitoring frequency for TRC in the current permit is continued in the draft. The draft permit also requires that one of the daily TRC samples be collected concurrently with the weekly *E. coli* and fecal coliform bacteria samples.

In addition to the numeric TRC limitations, the draft permit includes a requirement that the chlorination systems include alarms for indicating system interruptions or malfunctions and that interruptions or malfunctions be reported with the monthly compliance reports. This requirement is intended to supplement the grab sampling requirements for chlorine and bacteria and is in recognition of the limitations of a grab sampling program for determining consistent compliance with permit limits (see Footnote 9 in draft permit).

2. Nitrogen

It has been determined that excessive nitrogen loadings are causing significant water quality problems in Long Island Sound, including low dissolved oxygen. The State of Connecticut has begun to impose nitrogen limitations on Connecticut discharges to Long Island Sound and its tributaries. EPA believes there is a need to (1) determine the loadings of nitrogen from sources in Massachusetts which are tributaries to Long Island Sound, (2) to determine whether these loadings are impacting the water quality in Long Island Sound, and (3) to determine what limits, if any, should ultimately be imposed on discharges in Massachusetts. Therefore, the once-per-month monitoring requirements for ammonia-nitrogen, nitrite, nitrate, and Kjeldahl nitrogen in the current permit have been maintained in the draft permit. Information submitted by the permittee will continue to aid in the establishment of a database of nitrogen loadings, which can be used to quantitatively assess the impact of loading and transport of nitrogen to Long Island Sound and will also provide the information needed to make sound decisions in the future related to nitrogen loadings to the Sound.

3. Phosphorus

EPA 1986 Quality Criteria of Water (the “Gold Book”) recommends that instream phosphorus concentrations not exceed 0.05 mg/l in any stream entering a lake or reservoir, 0.1 mg/l for any stream not discharging directly to lakes or impoundments, and 0.025 mg/l within the lake or reservoir. The draft permit includes a year-round phosphorus limit of 1 mg/l, based on anti-backsliding requirements (summer limit) and water quality standards (winter limit). The summer (May 1st – October 31st) limit of 1 mg/l was included in the current permit (issued on November 28, 2001) in order to protect the water quality of the receiving water and to support the State of Connecticut’s eutrophication abatement strategy for the Housatonic River impoundments. The summer period phosphorus limitation is necessary since EPA believes that phosphorus is likely to accumulate in downstream impoundments.

The draft permit extends the 1 mg/l summer total phosphorus limitation in the current permit to year-round to ensure that the higher levels of phosphorus discharged in the winter period do not result in the accumulation of phosphorus in the downstream sediments. The limitation assumes that the vast majority of the phosphorus discharged will be in the dissolved fraction and that dissolved phosphorus will pass through the system given the short detention time of the impoundments and the lack of plant growth during the winter months.

Since the proposed winter phosphorus limitation is new for this facility, the draft permit allows a compliance schedule of one (1) year from the effective date of the permit for the permittee to come into compliance with the new winter phosphorus limit. Therefore, for the first winter period (November 1st through April 30th) following the effective date of the permit, the permittee shall report the total phosphorus concentrations while working towards meeting this limit.

If future evaluations indicate that more stringent phosphorus limits are necessary to achieve water quality standards the permit may be re-opened and modified. If necessary, the permittee may be asked to conduct the analysis through the authority of Section 308 of the Clean Water Act.

The draft permit also includes a seasonal (November 1st – March 31st) monitoring requirement for dissolved ortho-phosphorus. Monitoring for ortho-phosphorus is necessary to identify whether the particulate fraction remains low and to further understand the physical dynamics of phosphorus in the non-growing season. Without the ortho-phosphorus monitoring requirement, the Agencies cannot ensure that the higher loads authorized in the winter period are sufficiently protective of the water quality standards, specifically, that higher loads will not cause or contribute to instream eutrophication. The proposed monitoring requirement in the draft permit requires that sampling results reflect the dissolved ortho-phosphorus (P) concentration in the discharge.

4. Metals (Aluminum, Copper, Lead, and Zinc)

The Massachusetts Surface Water Quality Standards include requirements for the regulation and control of toxic constituents and also require that EPA criteria established pursuant to Section 304(a) of the CWA shall be used unless site-specific criteria are established.

In evaluating the reasonable potential for the Lenox WWTP discharge to cause or contribute to an excursion above any State water quality standard for a particular metal, an allowable effluent concentration was calculated based on an allowable instream concentration (taken from the 2002 EPA National Recommended Water Quality Criteria) and the available dilution at the point of discharge. The following equation was used in the calculation of an allowable instream concentration:

$$Cd = Cr \times DF$$

Where:

C_d = Allowable concentration of a specific pollutant in the effluent

C_r = Allowable instream pollutant concentration, taken from the 2002 EPA
National Water Quality Criteria

DF: Dilution Factor at the discharge location

Metals data submitted by the permittee along with whole effluent toxicity (WET) test reports from December 2004 to December 2006 (see **Attachment B**) was then compared to the calculated allowable effluent concentration. If the effluent data shows concentrations of a pollutant in excess of the calculated allowable effluent concentration, then reasonable potential exists for the discharge to cause or contribute to an excursion above any State water quality standard. In this case, a limit equal to the calculated allowable instream concentration would be included in the permit. The following sections illustrate the process used to determine whether or not effluent limitations for aluminum, copper, lead, and zinc needed to be included in the draft permit.

a. Aluminum

The following criteria from the EPA 2002 National Recommended Water Quality Criteria were used in the calculation of allowable acute and chronic effluent concentrations of aluminum:

Criteria Maximum Concentration (CMC) = 750 $\mu\text{g/l}$

Criteria Chronic Concentration (CCC) = 87 $\mu\text{g/l}$

Using the above criteria and a dilution factor of 21, the allowable concentrations of aluminum that can be discharged to the receiving water were calculated as follows:

Allowable Acute Effluent Concentration (Limit)

$C_d = \text{CMC} \times \text{DF}$

$C_d = 750 \mu\text{g/l} \times 21 = 15750 \mu\text{g/l} (15.8 \text{ mg/l})$

Allowable Chronic Effluent Concentration (Limit)

$C_d = \text{CCC} \times \text{DF}$

$C_d = 87 \mu\text{g/l} \times 21 = 1827 \mu\text{g/l} (1.83 \text{ mg/l})$

A review of aluminum data submitted by the permittee along with WET test reports (December 2004-December 2006) indicate that the concentrations of aluminum discharged from the treatment plant ranged from a minimum of 19 $\mu\text{g/l}$ to a maximum of 1900 $\mu\text{g/l}$, with the average concentration being 371 $\mu\text{g/l}$ (see **Attachment B**). The maximum discharge occurred in December 2005, and was the only exceedence of the calculated allowable chronic

and acute effluent concentrations that occurred during the twenty-four month review period. The permittee shall continue to monitor for aluminum as part of their whole effluent toxicity (WET) testing.

b. Hardness-dependent Metals (Copper, Lead, and Zinc)

Water Quality Criteria for copper, lead, and zinc are dependent upon the hardness of the water in which the criteria are being applied. Increasing hardness of the water acts to reduce the toxicity of these metals. The first step in determining whether reasonable potential exists for the discharge of copper, lead, and zinc from the Lenox WWTP to cause or contribute to an excursion above any narrative or numeric water quality criterion was to calculate the criteria for these metals in the receiving water. The calculations were based on the hardness of the receiving water where the discharge is located, the available dilution at the point of discharge, and the freshwater metals criteria contained in the EPA 2002 National Recommended Water Quality Criteria.

An instream hardness value of 125 mg/l was used in the calculation of acute and chronic water quality criteria for copper, lead, and zinc. This value is the average of the instream hardness values of the receiving water samples analyzed and submitted with WET test results from June 2005, September 2005, June 2006, and September 2006. These values were used because they were taken during the period of the year that typically experiences the lowest flows. The following equations from the EPA 2002 National Recommended Water Quality Criteria were used in the following calculations:

1. $\text{Acute Criteria}_{(\text{Dissolved})} = \exp \{m_a [\ln(h)] + b_a\} * CF$

Where:

m_a = pollutant-specific coefficient

b_a = pollutant-specific coefficient

\ln = natural logarithm

h = hardness of receiving water

CF^1 = pollutant-specific conversion factor used to convert total recoverable to dissolved metals

2. $\text{Chronic Criteria}_{(\text{Dissolved})} = \exp \{m_c [\ln(h)] + b_c\} * CF$

Where:

¹ EPA Metal Translator Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criteria (EPA-823-B96-007) was used as the basis for the use of the criteria conversion factor (CF). National Guidance requires that permits limits for metals are to be expressed in terms of total recoverable metal and not dissolved metal. As such, conversion factors are used to develop total recoverable limits from dissolved criteria. The conversion factor reflects how the discharge of a particular metal partitions between the particulate and dissolved form after mixing with the receiving water. In the absence of site-specific data describing how a particular discharge partitions in the receiving water, a default assumption equivalent to the criteria conversion factor is used in accordance with the Metal Translator Guidance.

m_c = pollutant- specific coefficient

b_c = pollutant-specific coefficient

\ln = natural logarithm

h = hardness of receiving water

CF = pollutant-specific conversion factor used to convert total recoverable to dissolved metals

Once pollutant-specific water quality criteria was calculated, allowable acute and chronic effluent concentrations (effluent limits) for each metal were then calculated by multiplying each criterion by the available dilution. Metals data submitted by the permittee over a two year period (December 2004-December 2006) was then reviewed and compared to the calculated allowable effluent concentrations. If the review found that metals had been discharged in concentrations that exceeded the allowable effluent concentration, limitations equivalent to the allowable concentrations were imposed in the draft permit.

Note: Values for the pollutant-specific coefficients and conversion factors were taken from **Appendix B** of the EPA 2002 National Recommended Water Quality Criteria.

COPPER

Calculation of Acute Water Quality Criteria and Effluent Limit for Copper:

$$m_a = 0.9422 \quad b_a = -1.700 \quad CF = 0.960 \quad h = 125$$

$$\text{Acute Criteria}_{(\text{Dissolved})} = \exp\{0.9422 [\ln(125)] + (-1.700)\} * 0.960 = 16.6 \mu\text{g/l}$$

$$\text{Dilution Factor} = 21$$

$$\text{Acute Allowable Effluent Concentration}_{(\text{Dissolved})} = 16.6 \mu\text{g/l} * 21 = 349 \mu\text{g/l}$$

$$\text{Acute Allowable Effluent Concentration}_{(\text{Total Recoverable})} = 349 \mu\text{g/l} / 0.960 = 364 \mu\text{g/l} \\ (0.364 \text{ mg/l})$$

Calculation of Chronic Water Quality Criteria and Effluent Limit for Copper:

$$m_c = 0.8545 \quad b_c = -1.702 \quad CF = 0.960 \quad h = 125$$

$$\text{Chronic Criteria}_{(\text{Dissolved})} = \exp\{0.8545 [\ln(125)] + (-1.702)\} * 0.960 = 10.8 \mu\text{g/l}$$

$$\text{Dilution Factor} = 21$$

$$\text{Chronic Effluent Limit}_{(\text{Dissolved})} = 10.8 \mu\text{g/l} * 21 = 227 \mu\text{g/l}$$

$$\text{Chronic Effluent Limit}_{(\text{Total Recoverable})} = 227 \mu\text{g/l} / 0.960 = 236 \mu\text{g/l} (0.236 \text{ mg/l})$$

A review of copper data submitted by the permittee along with WET test reports (December 2004-December 2006) revealed that the concentrations of copper discharged from the Lenox WWTP ranged from a minimum 7.7 $\mu\text{g/l}$ to a maximum of 16 $\mu\text{g/l}$, with the average

concentration discharged being 11.7 µg/l (see **Attachment B**). Since the maximum concentration of copper discharged was well below the calculated acute and chronic allowable effluent concentrations, it was determined that the discharge of copper from this facility poses no reasonable potential to cause or contribute to an excursion above a water quality criterion. Therefore, copper limits are not proposed in the draft permit. The permittee shall continue to monitor for copper as part of the whole effluent toxicity (WET) testing.

LEAD

Calculation of Acute Water Quality Criteria and Effluent Limit for Lead:

$$m_a = 1.273 \quad b_a = -1.460 \quad CF = 1.46203 - [\ln(h)(0.145712)] = 1.391675675 \quad h = 125$$

$$\text{Acute Criteria}_{(\text{Dissolved})} = \exp\{1.273 [\ln(125)] + (-1.46203)\} * 1.391675675 = 150.6 \mu\text{g/l}$$

$$\text{Dilution Factor} = 21$$

$$\text{Acute Effluent Limit}_{(\text{Dissolved})} = 150.6 \mu\text{g/l} * 21 = 3163 \mu\text{g/l}$$

$$\text{Acute Effluent Limit}_{(\text{Total Recoverable})} = 3163 \mu\text{g/l} / 1.391675675 = 2273 \mu\text{g/l} \text{ (2.27 mg/l)}$$

Calculation of Chronic Water Quality Criteria and Effluent Limit for Lead:

$$m_c = 1.273 \quad b_c = -4.705 \quad CF = 1.46203 - [\ln(h)(0.145712)] = 1.391675675 \quad h = 125$$

$$\text{Chronic Criteria}_{(\text{Dissolved})} = \exp\{1.273 [\ln(125) + (-4.705)]\} * 0.75503 = 5.88 \mu\text{g/l}$$

$$\text{Dilution Factor} = 21$$

$$\text{Chronic Effluent Limit}_{(\text{Dissolved})} = 5.88 \mu\text{g/l} * 21 = 123.5 \mu\text{g/l}$$

$$\text{Chronic Effluent Limit}_{(\text{Total Recoverable})} = 123.5 \mu\text{g/l} / 1.391675675 = 88.74 \mu\text{g/l} \\ \text{(0.089 mg/l)}$$

Lead data submitted by the permittee along with WET test reports (December 2004-December 2006) shows the concentrations of lead that were discharged in the Lenox WWTP effluent were consistently below detection levels (bdl) (see **Attachment B**). Therefore, there is no reasonable potential for the concentration of lead discharged from this facility to cause or contribute to an excursion above a water quality criterion, and lead limits are not proposed in the draft permit. The permittee shall continue to monitor for lead as part of the WET testing.

ZINC

Calculation of Acute Water Quality Criteria and Effluent Limitation for Zinc:

$$m_a = 0.8473 \quad b_a = 0.884 \quad CF = 0.978 \quad h = 125$$

$$\text{Acute Criteria}_{(\text{Dissolved})} = \exp\{0.8473 [\ln(125) + 0.884]\} * 0.978 = 141.6 \mu\text{g/l}$$

$$\text{Dilution Factor} = 21$$

$$\text{Acute Effluent Limit}_{(\text{Dissolved})} = 141.57 \mu\text{g/l} * 21 = 2973 \mu\text{g/l}$$

$$\text{Acute Effluent Limit}_{(\text{Total Recoverable})} = 2973 \mu\text{g/l} / 0.978 = 3040 \mu\text{g/l} (3.04 \text{ mg/l})$$

Calculation of Chronic Water Quality Criteria and Effluent Limitation for Zinc:

$$mc = 0.8473 \quad bc = 0.884 \quad CF = 0.986 \quad h = 125$$

$$\text{Chronic Criteria}_{(\text{Dissolved})} = \exp\{0.8473 [\ln(125)] + 0.884\} * 0.986 = 142.7 \mu\text{g/l}$$

$$\text{Dilution Factor} = 21$$

$$\text{Chronic Effluent Limit}_{(\text{Dissolved})} = 142.7 \mu\text{g/l} * 21 = 2997 \mu\text{g/l}$$

$$\text{Chronic Effluent Limit}_{(\text{Total Recoverable})} = 2997 \mu\text{g/l} / 0.986 = 3040 \mu\text{g/l} (3.04 \text{ mg/l})$$

A review of zinc data submitted by the permittee with WET test reports from December 2004-December 2006 revealed that the concentrations of zinc discharged from the Lenox WWTP ranged from a minimum of 23 $\mu\text{g/l}$ to a maximum of 50 $\mu\text{g/l}$, with the average concentration discharged being 34.1 $\mu\text{g/l}$ (see **Attachment B**). Since these concentrations are well below the calculated allowable effluent concentrations for zinc, there is no reasonable potential for this discharge to cause or contribute to an excursion above a water quality criterion. Therefore, zinc limits are not proposed in the draft permit. The permittee shall continue to monitor zinc as part of the WET testing.

d. Toxics Control: Outfall 001

Under Section 301(b)(1) of the CWA, discharges are subject to effluent limitations based on water quality standards. The Massachusetts Surface Water Quality Standards (314 CMR 4.05(5)(e)) include the following narrative statement and requires that EPA criteria established pursuant to Section 304(a)(1) of the CWA be used as guidance for interpretation of the following narrative criteria:

All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

National studies conducted by the EPA have demonstrated that domestic sources as well as industrial sources, contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. The Commonwealth of Massachusetts' current toxics policy, "Implementation Policy for the Control of Toxic Pollutants in Surface Waters", February 23, 1990, requires toxicity testing for all dischargers with dilutions less than or equal to 100. The frequency and types of toxicity testing required are dependent upon the available dilution and the risk of toxicity posed by the facility.

The principle advantages of Whole Effluent Toxicity (WET) testing are: (1) the effects of complex discharges of many known and unknown constituents can be measured only by biological analyses; (2) the bioavailability and any synergistic effects of pollutants are best

measured by toxicity testing; and (3) pollutants for which there are inadequate chemical analytical methods or criteria can be addressed.

Based on the potential for toxicity from domestic and industrial contributions, the state narrative water quality criterion, the level of dilution at the discharge location, and in accordance with EPA national and regional policy and 40 CFR § 122.44(d), the draft permit maintains the acute whole effluent acute toxicity (LC₅₀) limitation of $\geq 100\%$ that is in the current permit (See “Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants”, 49 Fed. Reg. 9016 March 9, 1984; see also EPA’s “Technical Support Document for Water Quality-Based Toxics Control”, March 1991).

The current permit requires WET testing four times per year using two freshwater species, *Pimephales promelas* (fathead minnow) and *Ceriodaphnia dubia* (daphnid). In accordance with Part I.A.1. of the current permit, the permittee requested a reduction in WET testing requirements. The past record for this facility indicates compliance with the existing WET limit of LC₅₀ $\geq 100\%$, and there is a medium to low risk of toxicity associated with this discharge. Also, there are no industrial users within this system (and none are expected during the life of draft permit, once issued). Therefore, the number of species to be used in WET tests has been reduced in the draft permit from two (*P. promelas* and *C. dubia*) to one (*C. dubia*). The decision to require WET testing using *C. dubia* was based on past WET test data from this facility, which indicates that *C. dubia* is the more sensitive test species. This reduction is consistent with reductions in toxicity test species for other wastewater treatment facilities in Massachusetts. Additionally, the frequency of WET testing has been reduced in the draft permit to twice per year.

The permittee shall conduct acute WET tests two (2) times per year using *Ceriodaphnia dubia* as the test species. WET tests shall be performed during the months of July and October, which are the months when the receiving water typically experiences lower flows. The toxicity tests must be performed in accordance with the EPA Region 1 test procedures and protocols specified in **Attachment B** of the draft permit.

VI. SLUDGE CONDITIONS

The Lenox WWTP generated 137.47 dry metric tons in the year preceeding submittal of the facility’s permit re-application. The sludge is trucked off-site by Synagro of Connecticut for incineration.

Section 405(d) of the CWA requires that EPA develop technical standards regarding the use and disposal of sewage sludge. On February 19, 1993, EPA promulgated technical standards, which are to be implemented through NPDES permits. The conditions in the draft permit satisfy this requirement.

VII. INDUSTRIAL USERS

The permittee is required to identify, in terms of character and volume of pollutants, any significant indirect dischargers into the POTW subject to pretreatment standards under Section 307(b) of the CWA and 40 CFR Part 4.3.

VIII. ESSENTIAL FISH HABITAT DETERMINATION (EFH)

Under the 1996 amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et. Seq. (1998)), EPA is required to consult with the National Marine Fisheries Services (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat," (16 U.S.C. § 1855(b)).

The Amendments broadly define "essential fish habitat" (EFH) as: waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity," (16 U.S.C. § 1802(10)). "Adverse impact" means any impact which reduces the quality and/or quantity of EFH (50 CFR § 600.910(a)). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

Essential Fish Habitat is only designated for species for which federal fisheries management plans exist (16 U.S.C. § 1855(b)(1)(A)). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999. The Housatonic River is not covered by the EFH designation for riverine systems and thus EPA and the MassDEP have determined that a formal EFH consultation with NMFS is not required.

IX. ENDANGERED SPECIES ACT (ESA)

Section 7(a) of the Endangered Species Act (ESA) of 1973 as amended (the "Act"), grants authority to and imposes requirements upon Federal agencies regarding threatened or endangered species of fish, wildlife or plants ("listed species") and habitat of such species that has been designated as critical ("critical habitat").

Section 7(a)(2) of the Act requires every Federal agency in consultation with and with the assistance of the Secretary of the Interior, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or results in the destruction or adverse modification of critical habitat. The National Marine Fisheries Service (NMFS) administers Section 7 consultations for marine species and anadromous fish. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species.

EPA and MassDEP have determined that an ESA consultation is not required for this discharge, since no listed species or critical habitat are located in an area that could be affected by the Lenox WWTP discharge.

X. MONITORING AND REPORTING

The permittee is obligated to monitor and report sampling results to EPA and the MassDEP within the time specified within the permit. Timely reporting is essential for the regulatory agencies to expeditiously assess compliance with permit conditions.

XI. STATE PERMIT CONDITIONS

The NPDES permit is issued jointly by the U.S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection under federal and state law, respectfully. As such, all the terms and conditions of the permit are, therefore, incorporated into and constitute a discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection pursuant to M.G.L. Chap. 21, § 43.

XII. GENERAL CONDITIONS

The general conditions of the permit are based on 40 CFR Parts 122, Subparts A and D and 40 CFR § 124, Subparts A, D, E, and F and are consistent with the management requirements common to other permits.

XIII. STATE CERTIFICATION REQUIREMENTS

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving waters certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the draft permit will be certified.

XIV. PUBLIC COMMENT PERIOD AND PROCEDURES FOR FINAL DECISION

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, Office of Ecosystem Protection, Municipal Permits Branch (CMP), Suite 1100, Boston, Massachusetts 02114-2023. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. Public hearings may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates a significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the final permit decision, any interested person may submit a petition for review of the permit with EPA's Environmental Appeals Board consistent with 40 CFR § 124.19.

XV. EPA AND MASSDEP CONTACTS

Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays, from the EPA and MassDEP contacts below:

Meridith Decelle
U.S. Environmental Protection Agency
Office of Ecosystem Protection
One Congress Street
Suite 1100 (CMP)
Boston, MA 02114
Telephone: 617-918-1533
Fax: 617-918-1505
e-mail: decelle.meridith@epa.gov

Paul Hogan
Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, MA 01608
Fax: 508-791-4131
Telephone: 508-767-2796

Date

Stephen S. Perkins, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

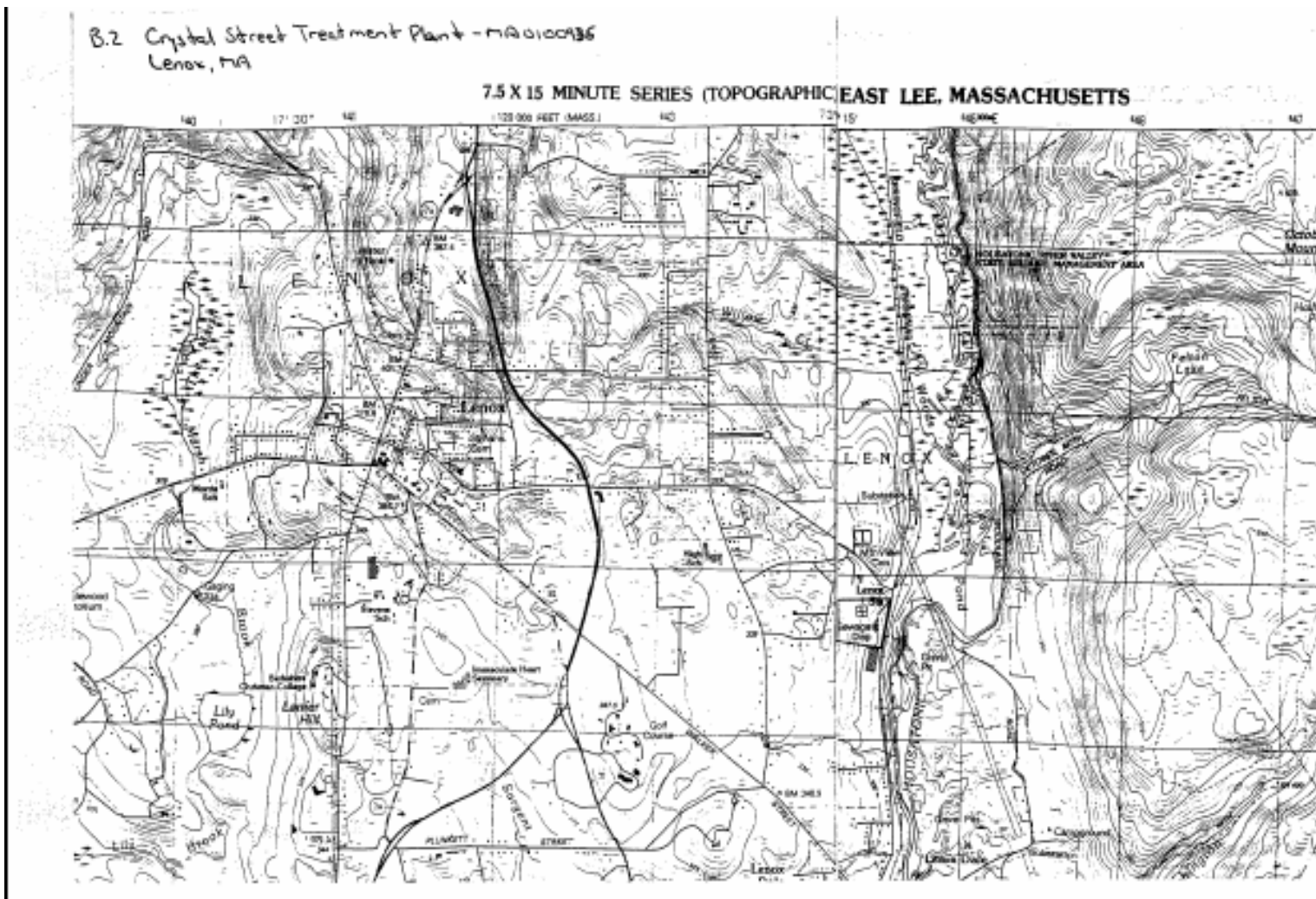


Figure 1: Site Map of the Lenox WWTP



Attachment A
Lenox WWTP Effluent Data (2005-2007)

Date	Flow (MGD)		BOD ₅ (mg/l)			TSS (mg/l)			pH (SU)		Fecal Coliform Bacteria (April 1-Oct.)		Total Residual Chlorine (April 1-Oct.)		Ammonia Nitrogen (mg/l)	Total Kjeldahl Nitrogen (mg/l)	Total Nitrite Nitrogen (mg/l)	Total Nitrate Nitrogen (mg/l)	Total Phosphorus (May 1-Oct. 31) (mg/l)		Whole Effluent Toxicity (LC50)	
	Avg. Monthly	Max. Daily	Avg. Monthly	Avg. Weekly	Max. Daily	Avg. Monthly	Avg. Weekly	Max. Daily	Minimum	Maximum	Avg. Monthly	Max. Daily	Avg. Monthly	Max. Daily	Avg. Monthly	Avg. Monthly	Avg. Monthly	Avg. Monthly	Avg. Monthly	Max. Daily	Max. Daily (C.dubia)	Max. Daily (P. promelas)
Existing Limits	1.19	Report	30	45	Report	30	45	Report	6.5	8.3	200	400	0.23	0.4	Report	Report	Report	Report	1.0	Report	LC₅₀ ≥100%	LC₅₀ ≥100%
1/31/2005	0.769	2.54	13.2	15.5	15.5	4.5	6.4	6.4	7.1	7.6					1.5	2.7	1.39	4.03				
2/28/2005	0.792	2.174	15.3	20.8	20.8	3.9	5.2	5.2	7.1	7.8					18.4	18.8	0.19	0.34				
3/31/2005	0.803	4.226	10.5	15.5	15.5	3	4.8	4.8	7	7.7					1.62	7.2	0.01	0.2			100	100
4/30/2005	0.8	2.404	9.5	13	13	2.9	3.4	3.4	7	7.7	0.16	0.23	0.16	0.23	1	6.2	0.01	0.54				
5/31/2005	0.86	1.393	11.3	18.9	18.9	5.9	8.2	8.2	7	7.6	0.19	0.29	0.19	0.29	15.3	16.1	0.21	2.12	0.35	0.42		
6/30/2005	0.79	0.794	8.8	11.5	11.5	8.2	15.4	15.4	7	7.7	0.19	0.24	0.19	0.24	16	16.5	0.08	0.37	0.4	0.56	100	100
7/31/2005	0.795	0.828	10.1	17.2	17.2	8.7	11.2	11.2	6.9	7.6	0.16	0.24	0.16	0.24	0.14	2.9	0.01	6.31	0.4	0.59		
8/31/2005	0.784	0.642	7.6	9.8	9.8	6.9	10.2	10.2	6.8	7.5	0.19	0.25	0.19	0.25	0.44	1.8	0.1	2.46	0.45	0.62		
9/30/2005	0.755	0.536	9.1	12.9	12.9	5.7	12.6	12.6	6.8	7.4	0.2	0.33	0.2	0.33	0.11	0.13	0.01	21.6	0.24	0.35	100	100
10/31/2005	0.782	2.273	6.1	8	8	2.2	2.8	2.8	7	7.9	0.17	0.26	0.17	0.26	0.11	0.13	0.01	21.6	0.51	0.74		
11/30/2005	0.818	2.929	8.6	11.4	11.4	7.1	9.2	9.2	7.5	7.9					0.06	1.7	0.01	8.4				
12/31/2005	0.877	1.829	7.1	11.6	11.6	4.8	7.6	7.6	7.6	7.9					0.43	0.63	0.01	9			100	100
1/31/2006	0.871	2.485	7.8	10	10	5.5	13.4	13.4	7.5	7.9					0.39	1.4	0.25	6.6				
2/28/2006	0.885	1.999	10.2	20	20	4.4	6	6	7.6	7.9					0.45	0.47	0.27	5.9				
3/31/2006																						
4/30/2006	0.84	1.581	8.9	15.4	15.4	3.1	4	4	7.4	7.9	0.2	0.23	0.2	0.23	0.01	1.5	0.17	9				
5/31/2006	0.753	1.329	8.3	11	11	5.9	11.4	11.4	7	7.5	0.17	0.25	0.17	0.25	2	2.5	0.63	5.5	0.57	0.74		
6/30/2006	0.867	1.065	8.9	12.8	12.8	4.1	6.8	6.8	7.1	7.5	0.17	0.29	0.17	0.29	0.09	0.1	0.03	14	0.43	0.51		
7/31/2006	0.866	0.89	6.2	7.4	7.4	2.6	4.4	4.4	7.1	7.6	0.17	0.23	0.17	0.23	0.29	0.4	0.01	18	0.44	0.73		
8/31/2006	0.868	0.788	5.6	6.2	6.2	2.1	11.4	11.4	6.9	7.4	0.19	0.28	0.19	0.28	0.04	0.1	0.02	15.4	0.5	0.7		
9/30/2006	0.879	0.907	5	6.2	6.2	2.9	4.4	4.4	7.3	7.6	0.18	0.28	0.18	0.28	0.11	0.1	0.01	14	0.36	0.43		
10/31/2006	0.848	1.105	4	7.5	7.5	2.9	6	6	7.2	7.8	0.13	0.23	0.13	0.23	0.21	0.8	0.123	14.4	0.5	0.66		
11/30/2006	0.833	1.445	5.6	7.8	7.8	2.9	5.2	5.2	7.4	7.9					0.09	0.2	0.01	12.6				
12/31/2006	0.799	0.803	7.5	12.5	12.5	3.3	5	5	7.4	7.9					0.13	0.1	0.01	12				
1/31/2007	0.761	1.453	6.1	7.3	7.3	1.2	2.2	2.2	7.2	7.7					0.09	0.6	0.05	7.6				
2/28/2007	0.72	0.651	11.7	15.9	15.9	5.1	9.2	9.2	7	7.4					0.37	2	1.9	7				
Min	0.720	0.536	4	6.2	6.2	1.2	2.2	2.2	6.8	7.4	0.13	0.23	0.13	0.23	0.01	0.1	0.01	0.2	0.24	0.35	100	100
Max	0.885	4.226	15.3	20.8	20.8	8.7	15.4	15.4	7.6	7.9	0.2	0.33	0.2	0.33	18.4	18.8	1.9	21.6	0.57	0.74	100	100
Average	0.817	1.563	8.5	12.2	12.2	4.4	7.5	7.5	7.2	7.7	0.18	0.26	0.18	0.26	2.3752	3.40	0.22	8.76	0.43	0.59	100	100

Attachment B - Lenox WWTP Metals Data (2004-2006)

Date	Hardness (mg/l)	Aluminum (µg/l)	Copper (µg/l)	Lead (µg/l)	Zinc (µg/l)
Dec. 2004	120	24	7.7	ND	23
March 2005	110	20	7.9	ND	24
June 2005	150	1900	10	ND	38
Sept. 2005	120	220	16	ND	50
Dec. 2005	110	30	11	ND	25
March 2006	110	23	16	ND	41
June 2006	100	730	12	ND	ND
Dec. 2006	130	19	13	ND	38
Min.	100	19	7.7	0	23
Max.	150	1900	16	0	50
Average	119	371	11.7	0	34.1

Attachment B - Lenox WWTP Metals Data (2004-2006) Submitted With WET Test Reports

Date	Hardness (mg/l)	Aluminum (µg/l)	Cadmium (µg/l)	Chromium (µg/l)	Copper (µg/l)	Lead (µg/l)	Nickel (µg/l)	Zinc (µg/l)
Dec. 2004	120	24	ND	ND	7.7	ND	ND	23
March 2005	110	20	ND	ND	7.9	ND	ND	24
June 2005	150	1900	ND	2.2	10	ND	ND	38
Sept. 2005	120	220	ND	ND	16	ND	ND	50
Dec. 2005	110	30	ND	ND	11	ND	3.5	25
March 2006	110	23	ND	ND	16	ND	3.9	41
June 2006	100	730	ND	ND	12	ND	ND	ND
Dec. 2006	130	19	ND	ND	13	ND	2.3	38
Min.	100	19	0	2.2	7.7	0	2.3	23
Max.	150	1900	0	2.2	16	0	3.9	50
Average	119	371	0	2.2	11.7	0	3.2	34.1

A.

x	y
Jun-04	
Sept. 2004	
June 2005	150
Sept. 2005	120
Dec. 2005	110
June 2006	100
Dec. 2006	130

122

B

June 2003	1	124
Sept. 2003	2	120
June 2004	3	150
Sept. 2004	4	140
June 2005	5	150
Sept. 2005		110

June 2003	1	124
Sept. 2003	2	120
June 2004	3	150
Sept. 2004	4	140
June 2005	5	150
Sept. 2005	6	110

